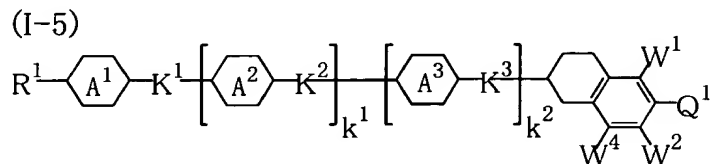
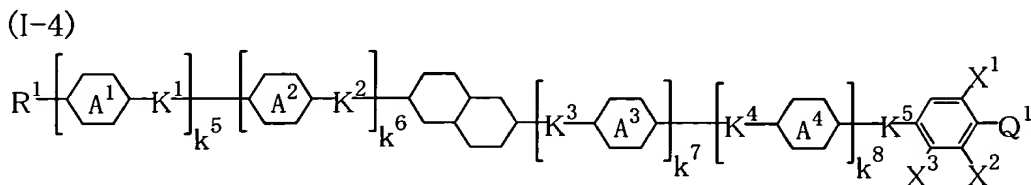
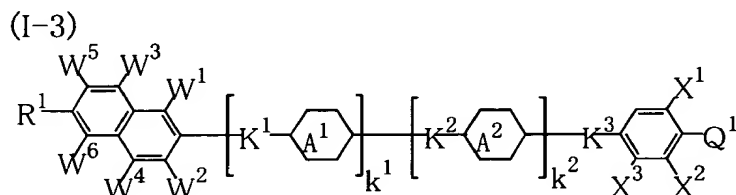
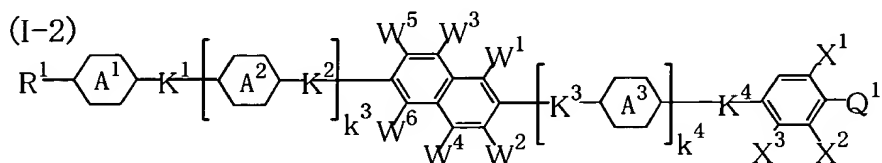
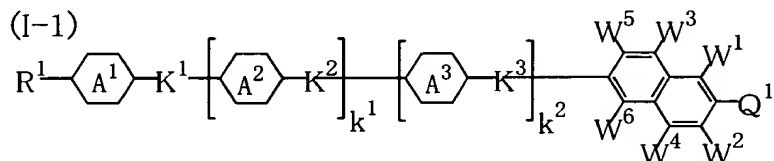


## CLAIMS

1. A nematic liquid crystal composition comprising a liquid crystal component A composed of one, or two or more kinds of compounds represented by one, two, or three or more general formulas selected from the general formulas (I-1) to (I-5):



(wherein one, or two or more CH groups, which are present in a naphthalene-2,6-diyl ring, may be substituted with a N group,

- 10 one, or two or more -CH<sub>2</sub>- groups, which are present in a decahydronaphthalene-2,6-diyl ring, may be substituted with -CF<sub>2</sub>-, one, or two or more -CH<sub>2</sub>- CH<sub>2</sub>- groups, which are present in said ring, may be substituted with -

CH<sub>2</sub>O-, -CH=CH-, -CH=CF-, -CF=CF-, -CH=N- or -CF=N-, one, or two or more >CH-CH<sub>2</sub>-groups, which are present in said ring, may be substituted with >CH-O-, >C=CH-, >C=CF-, >C=N- or >N-CH<sub>2</sub>-, a >CH-CH< group, which is present in the ring, may be substituted with >CH-CF<, >CF-CF< or >C=C<, and at least one C in said non-substituted or substituted ring may be substituted with Si;

R<sup>1</sup> each independently represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 2 to 10 carbon atoms, said alkyl or alkenyl group can have one, or two or more F, Cl, CN, CH<sub>3</sub> or CF<sub>3</sub> as a non-substituent or substituent group, and one, or two or more CH<sub>2</sub> group, which are present in said alkyl or alkenyl group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

Q<sup>1</sup> each independently represents F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, OCF<sub>2</sub>H, OCFH<sub>2</sub>, NCS, or CN;

X<sup>1</sup> to X<sup>3</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN; X<sup>3</sup> each independently represents CH<sub>3</sub>;

W<sup>1</sup> to W<sup>6</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, and also W<sup>4</sup> each independently represents CH<sub>3</sub>;

K<sup>1</sup> to K<sup>5</sup> each independently represents, a single bond, -COO-, -OCO-, -CH<sub>2</sub>O-, -OCH<sub>2</sub>-, -CH=CH-, -CF=CF-, -C≡C-, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH=CH-(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-CH=CH-, -CH=N-, =CH=N-N=CH-, or -N(O)=N-;

rings A<sup>1</sup> to A<sup>4</sup> each independently represents 1,4-phenylene, 2- or 3-fluoro-1,4-phenylene, 2,3-difluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-

phenylene, 2,3-dichloro-1,4-phenylene, 3,5-dichloro-1,4-phenylene, pyrimidine-2,5-diyl, trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene,  
 5 naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, and naphthalene-2,6-diyl and 1,2,3,4-tetrahydronaphthalene-2,6-diyl can have one, or two or more F, Cl, CF<sub>3</sub>, OCF<sub>3</sub> or CH<sub>3</sub> as a non-substituent or substituent group;

10 one, or two or more hydrogen atoms, which are present in a naphthalene-2,6-diyl ring, a 1,2,3,4-tetrahydronaphthalene-2,6-diyl ring, a decahydronaphthalene-2,6-diyl ring, a side chain group R<sup>1</sup>, a polar group Q<sup>1</sup>, linking groups K<sup>1</sup> to K<sup>5</sup> and rings A<sup>1</sup> to A<sup>4</sup>, may be substituted with a deuterium atom;

15 k<sup>1</sup> to k<sup>8</sup> each independently represents 0 or 1, k<sup>3</sup> + k<sup>4</sup> is 0 or 1, and k<sup>5</sup> + k<sup>6</sup> + k<sup>7</sup> + k<sup>8</sup> is 0, 1 or 2; and

atoms, which constitute the compounds of the general formulas (I-1) to (I-5), may be substituted with isotope atoms thereof); 0 to 99.9% by weight of a liquid crystal component B  
 20 composed of a compound having a dielectric constant anisotropy of +2 or more as a liquid crystal component excluding the compounds of the general formulas (I-1) to (I-5); and 0 to 85% by weight of a liquid crystal component C composed of a compound having a dielectric constant anisotropy within a  
 25 range from -10 to +2; the sum total of said liquid crystal component B and said liquid crystal component C being within a range from 0 to 99.9% by weight.

2. A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component A satisfies at least one of the following conditions:

5        (i) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), the content of said selected compounds in said  
10 liquid crystal component A being within a range from 5 to 100% by weight;

      (ii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1) and one, or two or more kinds of  
15 compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

      (iii) said liquid crystal component A contains one, or  
20 two or more kinds of compounds selected from compounds represented by the general formula (I-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a  
25 range from 5 to 100% by weight;

      (iv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented

by the general formula (I-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100%  
5 by weight;

(v) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general  
10 formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(vi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented  
15 by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

20 (vii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected  
25 compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(viii) said liquid crystal component A contains one, or

two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected  
5 compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(ix) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of  
10 compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(x) said liquid crystal component A contains one, or two  
15 or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100%  
20 by weight;

(xi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general  
25 formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid

crystal component A being within a range from 5 to 100% by weight;

(xii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xiii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xiv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said

liquid crystal component A being within a range from 5 to 100% by weight;

(xv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xvi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xvii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said



liquid crystal component A being within a range from 5 to 100% by weight;

(xviii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xix) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xx) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid

crystal component A being within a range from 5 to 100% by weight;

(xxi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds  
5 represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from  
10 compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds  
15 represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from  
20 compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxiii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds  
25 represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds

selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxiv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxvi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds

represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 10 to 100% by weight;

(xxvii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxviii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxix) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxx) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds

represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight; and

(xxxi) said liquid crystal component A contains one, or  
 5 two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight.

10 3. A nematic liquid crystal composition according to claim 1 or 2, wherein said liquid crystal component A contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (I-ai) to (I-avii), the content of said compounds being within a range from  
 15 10 to 100% by weight:

(I-ai) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 7 carbon atoms,

(I-aii) compound in which  $Q^1$  is F, Cl,  $CF_3$ ,  $OCF_3$ ,  $OCF_2H$ , or CN,

20 (I-aiii) compound in which  $K^1$  to  $K^5$  represent single bond,  $-(CH_2)_2-$ ,  $-COO-$ , or  $-C\equiv C-$ ,

(I-aiv) compound in which rings  $A^1$  to  $A^4$  represent trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, and

(I-av) compound in which one, or two or more hydrogen atoms,  
 25 which are present in naphthalene-2,6-diyl ring, a 1,2,3,4-tetrahydronaphthalene-2,6-diyl ring, a decahydronaphthalene-2,6-diyl ring, a side chain group  $R^1$ , a polar group  $Q^1$ , linking

groups  $K^1$  to  $K^5$  and rings  $A^1$  to  $A^4$ , are substituted with deuterium atoms, in the general formulas (I-1) to (I-5); (I-avi) compound in which  $W^1$  to  $W^3$  represent H, F, Cl,  $CF_3$ , or  $OCF_3$  in the general formulas (I-1) to (I-3) and (I-5); and  
 5 (I-avii) compound in which  $X^1$  and  $X^2$  represent H, F, Cl,  $CF_3$ , or  $OCF_3$  in the general formulas (I-2) to (I-4).

4. A nematic liquid crystal composition according to any one of claims 1 to 3, wherein said liquid crystal component A  
 10 contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (I-bi) to ~~(I-bviii)~~ (I-bxi), the content of said compounds being within a range from 5 to 100% by weight:  
 (I-bi) compound in which  $k^1=k^2=0$ , the ring  $A^1$  is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl,  $K^1$  is a single bond,  $-(CH_2)_2-$ ,  $-COO-$ , or  $-C\equiv C-$ , and  
 15 (I-bii) compound in which  $k^1=1$ ,  $k^2=0$ , rings  $A^1$  and  $A^2$  represent trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or  
 20 decahydronaphthalene-2,6-diyl,  $K^1$  is a single bond,  $-(CH_2)_2-$ ,  $-COO-$ , or  $-C\equiv C-$ ,  $K^1$  and  $K^2$  represent a single  
 25 bond,  $-(CH_2)_2-$ ,  $-COO-$ , or  $-C\equiv C-$ , in the general formula (I-1) in which  $R^1$  is an alkyl or alkenyl group having 2 to 7 carbon atoms,  $Q^1$  is F, Cl,  $CF_3$ ,  $OCF_3$ , or CN, and  $W^1$  to  $W^3$  each

represents H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>;

(I-biii) compound in which  $k^3=k^4=0$ , the ring A<sup>1</sup> is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, and K<sup>1</sup> and K<sup>4</sup> represent a single

5 bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-, in the general formula (I-2) in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, X<sup>1</sup> and X<sup>2</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>, and W<sup>1</sup> to W<sup>3</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>;

(I-biv) compound in which  $k^1=k^2=0$ , K<sup>3</sup> is a single bond, -COO-,  
10 or -C≡C-, and

(I-bv) compound in which  $k^1=1$ ,  $k^2=0$ , the ring A<sup>1</sup> is 1,4-phenylene, 3-fluoro-1,4-phenylene, or a 3,5-difluoro-1,4-

phenylene, K<sup>1</sup> and K<sup>3</sup> represent single bond, -COO- or -C≡C-, in  
the general formula (I-3) in which R<sup>1</sup> is an alkyl or alkenyl  
15 group having 2 to 7 carbon atoms, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or  
CN, X<sup>1</sup> and X<sup>2</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>, and W<sup>1</sup> to W<sup>3</sup>  
represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>;

(I-bvi) compound in which  $k^5=k^6=k^7=k^8=0$ , K<sup>5</sup> is a single  
bond, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -COO-, or -C≡C-,

20 (I-bvii) compound in which  $k^5=1$ ,  $k^6=k^7=k^8=0$ , the ring A<sup>1</sup> is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, K<sup>1</sup> and K<sup>5</sup> represent a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-,

(I-bviii) compound in which  $k^7=1$ ,  $k^5=k^6=k^8=0$ , the ring A<sup>3</sup> is  
25 trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, K<sup>3</sup> and K<sup>5</sup> represent a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-, and

(I-bix) compound in which the decahydronaphthalene-2,6-diyl ring has at least one substituent among substituents  $-\text{CF}_2-$ ,  $-\text{CH}_2-$

$\text{O}-$ ,  $-\text{CH}=\text{CH}-$ ,  $-\text{CH}=\text{CF}-$ ,  $-\text{CF}=\text{CF}-$ ,  $-\text{CH}=\text{N}-$ ,  $-\text{CF}=\text{N}-$ ,  $>\text{CH}-\text{O}-$ ,  $>\text{C}=\text{CH}-$ ,

5  $>\text{C}=\text{CF}-$ ,  $>\text{C}=\text{N}-$ ,  $>\text{N}-\text{CH}_2-$ ,  $>\text{CH}-\text{CF}<$ ,  $>\text{CF}-\text{CF}<$ ,  $>\text{C}=\text{C}<$ , and Si, in the general formula (I-4) in which  $\text{R}^1$  is an alkyl or alkenyl group having 2 to 7 carbon atoms,  $\text{Q}^1$  is F, Cl,  $\text{CF}_3$ ,  $\text{OCF}_3$ , or CN, and  $\text{X}^1$  and  $\text{X}^2$  represent H, F, Cl,  $\text{CF}_3$ ,  $\text{OCF}_3$ ; and

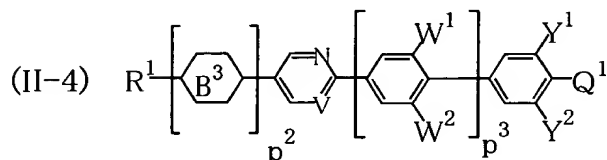
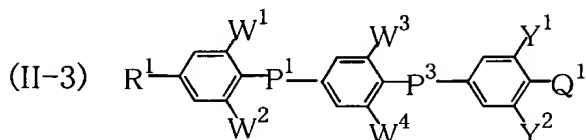
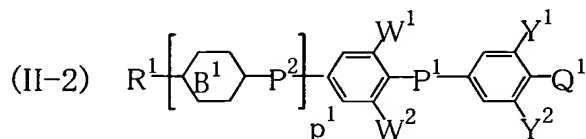
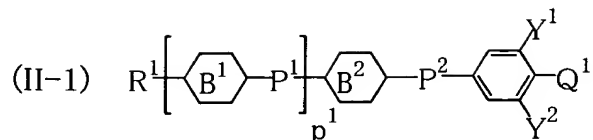
(I-bx) compound in which  $k^1=k^2=0$ , the ring  $\text{A}^1$  is trans-1,4-  
10 cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl,  $\text{K}^1$  is a single bond,  $-(\text{CH}_2)_2-$ ,  $-(\text{CH}_2)_4-$ , or  $-\text{COO}-$ , and  
(I-bxi) compound in which  $k^1=1$ ,  $k^2=0$ , rings  $\text{A}^1$  and  $\text{A}^2$  represent  
15 trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or  
decahydronaphthalene-2,6-diyl, and  $\text{K}^1$  and  $\text{K}^2$  each represents a  
single bond,  $-(\text{CH}_2)_2-$ ,  $-(\text{CH}_2)_4-$ , or  $-\text{COO}-$ , in the general

20 formula (I-5) in which  $\text{R}^1$  is an alkyl or alkenyl group having 2 to 7 carbon atoms,  $\text{Q}^1$  is F, Cl,  $\text{CF}_3$ ,  $\text{OCF}_3$ , or CN, and  $\text{W}^1$  and  $\text{W}^2$  represent H, F, Cl,  $\text{CF}_3$ , or  $\text{OCF}_3$ .

5. A nematic liquid crystal composition according to any one  
25 of claims 1 to 4, wherein said liquid crystal component B contains one, or two or more kinds of compounds selected from the group of compounds represented by the general formulas



(II-1) to (I-4):



(wherein  $R^1$  each independently represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 2 to 10 carbon atoms, said alkyl or alkenyl group can have one, or two or more F, Cl, CN,  $\text{CH}_3$  or  $\text{CF}_3$  as a non-substituent or substituent group, and one, or two or more  $\text{CH}_2$  group, which are present in said alkyl or alkenyl group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

$Q^1$  each independently represents F, Cl,  $\text{CF}_3$ ,  $\text{OCF}_3$ ,  $\text{OCF}_2\text{H}$ ,  $\text{OCFH}_2$ , NCS, or CN;

$W^1$  to  $W^4$  each independently represents H, F, Cl,  $\text{CF}_3$ ,  $\text{OCF}_3$ , or CN, and also  $W^4$  each independently represents  $\text{CH}_3$ ;

15 |  $Y^1$  and  $Y^2$  each independently represents H, F, Cl,  $\text{CF}_3$ ,  
|  ~~$\text{OCF}_3$ , or CN;~~

V represents CH or N;

$P^1$  to  $P^3$  each independently represents, a single bond,  $-\text{COO}-$ ,  $-\text{OCO}-$ ,  $-\text{CH}_2\text{O}-$ ,  $-\text{OCH}_2-$ ,  $-(\text{CH}_2)_2-$ ,  $-(\text{CH}_2)_4-$ ,  $-\text{CH}=\text{CH}-$ ,  $(\text{CH}_2)_2-$ ,  $-(\text{CH}_2)_2-\text{CH}=\text{CH}-$ ,  $-\text{CH}=\text{N}-$ ,  $=\text{CH}=\text{N}-\text{N}=\text{CH}-$ , or  $-\text{N}(\text{O})=\text{N}-$ , and  $P^1$  and  $P^3$  each independently represents  $-\text{CH}=\text{CH}-$ ,  $-\text{CF}=\text{CF}-$ , or C  
5  $\equiv\text{C}-$ ;

rings  $B^1$  to  $B^3$  each independently represents trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, or trans-4-sila-1,4-cyclohexylene, and the ring  $B^3$  may also be 1,4-phenylene, 2-  
10 or 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-phenylene, 2,3-dichloro-1,4-phenylene, or 3,5-dichloro-1,4-phenylene;

one, or two or more hydrogen atoms, which are present in a side chain group  $R^1$ , a polar group  $Q^1$ , linking groups  $P^1$  to  
15  $P^3$  and rings  $B^1$  to  $B^3$ , may be substituted with a deuterium atom;

$p^1$  to  $p^3$  each independently represents 0 or 1, and  $p^2 + p^3$  is 0 or 1; and

atoms, which constitute the compounds of the general  
20 formulas (II-1) to (II-4), may be substituted with isotope atoms thereof).

6. A nematic liquid crystal composition according to claim 5, wherein said liquid crystal component B contains one to twenty  
25 kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (II-ai) to (II-axii), the content of said compounds being within a range from

10 to 100% by weight:

(II-ai) compounds in which  $R^1$  is an alkyl or alkenyl group having 2 to 5 carbon atoms, in the general formulas (II-1) to (II-4);

5 (II-a ii) compounds in which  $Q^1$  is F, Cl, or  $-OCF_3$ , in the general formulas (II-1) to (II-4);

(II-a iii) compounds in which  $P^2$  is  $-(CH_2)_2-$  or  $-(CH_2)_4-$ , in the general formula (II-1);

(II-a iv) compound in which  $p^1$  is 1, in the general formula

10 (II-1);

(II-a v) compound in which at least one of  $Y^1$ ,  $Y^2$ ,  $W^1$  and  $W^2$  is F, in the general formula (II-2);

(II-a vi) compound in which  $p^1$  is 1 and  $P^1$  is  $-C\equiv C-$ , in the general formula (II-2);

15 (II-a vii) compound in which  $P^2$  is a single bond or  $-(CH_2)_2-$  and  $P^1$  is  $-COO-$ , in the general formula (II-2);

(II-a viii) compound in which at least one of  $Y^1$ ,  $Y^2$ , and  $W^1$  to  $W^4$  is F, in the general formula (II-3);

(II-a ix) compound in which  $P^3$  is  $-C\equiv C-$ , in the general formula

20 (II-3);

(II-a x) compound in which  $P^1$  is a single bond or  $-C\equiv C-$  and  $P^3$  is  $-COO-$ , in the general formula (II-3);

(II-a xi) compound represented by the general formula (II-4);

and

25 (II-a xii) compound in which at least one of rings  $B^1$  to  $B^3$  is substituted with a deuterium atom if the rings  $B^1$  to  $B^3$  represent trans-1,4-cyclohexylene, in the general formulas

(II-1), (II-2) and (II-4).

7. A nematic liquid crystal composition according to claim 5, wherein said liquid crystal component B contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (II-bi) to (II-bviii), the content of said compounds being within a range from 10 to 100% by weight:

(II-bi) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 5 carbon atoms,  $p^1$  is 0, and  $Q^1$  is -CN, in the general formula (II-1);

(II-bii) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 5 carbon atoms,  $p^1$  is 1,  $Q^1$  is F or -CN, and  $Y^1$  and  $Y^2$  represent H or F, in the general formula (II-1);

(II-biii) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 5 carbon atoms,  $p^1$  is 0,  $Q^1$  is -CN, and  $Y^1$ ,  $Y^2$ ,  $W^1$  and  $W^2$  represent H or F, in the general formula (II-2);

(II-biv) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 5 carbon atoms,  $p^1$  is 1,  $P^2$  is a single bond,  $-(CH_2)_2-$ , or  $-COO-$ ,  $P^1$  is a single bond,  $-COO-$ , or  $-C\equiv C-$ ,  $Q^1$  is F or -CN, and  $Y^1$ ,  $Y^2$ ,  $W^1$  and  $W^2$  represent H or F, in the general formula (II-2);

(II-bv) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 5 carbon atoms, and one of  $P^1$  and  $P^3$  is a single bond and other one is a single bond,  $-COO-$ , or  $-C\equiv C-$ , in the general formula (II-3);

(II-bvi) compound in which  $R^1$  is an alkyl or alkenyl group

having 2 to 5 carbon atoms, and  $Y^1$ ,  $Y^2$  and  $W^1$  to  $W^4$  represent H or F, in the general formula (II-3);

(II-bvii) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 7 carbon atoms, and  $p^2+p^3=0$ , in the general formula

5 (II-4); and

(II-bviii) compounds of the general formulas (II-1) to (II-2) in which at least one hydrogen atom of rings  $B^1$  and  $B^2$  is substituted with a deuterium atom if rings  $B^1$  and  $B^2$  represent trans-1,4-cyclohexylene.

10

8. A nematic liquid crystal composition according to claim 5, wherein said liquid crystal component B contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (II-ci) to (II-civ),  
15 the content of said compounds being within a range from 10 to 100% by weight:

(II-ci) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 5 carbon atoms,  $p^1$  is 1, one of  $P^1$  and  $P^2$  is a single bond and other one is a single bond,  $-COO-$ ,  $-(CH_2)_2-$ ,  
20 or  $-(CH_2)_4$ ,  $Q^1$  is F, Cl,  $CF_3$ ,  $OCF_3$ , or  $OCF_2H$ , and one, or two or more of  $Y^1$  and  $Y^2$  represent F, in the general formula (II-2);

(II-cii) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 5 carbon atoms,  $p^1$  is 1,  $P^2$  is a single bond,  $-(CH_2)_2-$ , or  $-COO-$ ,  $P^1$  is a single bond,  $-COO-$ , or  $-C\equiv C-$ ,  
25  $Q^1$  is F, Cl,  $CF_3$ ,  $OCF_3$ , or  $OCF_2H$ , one, or two or more of  $Y^1$  and  $Y^2$  represent F, and  $W^1$  and  $W^2$  represent H or F, in the general

formula ~~(II-2)~~ (II-1);

(II-ciii) compound in which  $R^1$  is an alkyl or alkenyl group having 2 to 5 carbon atoms, one of  $P^1$  and  $P^3$  is a single bond and the other one is a single bond,  $-COO-$ , or  $-C\equiv C-$ ,  $Q^1$  is F, Cl,  $CF_3$ ,  $OCF_3$ , or  $OCF_2H$ , one, or two or more of  $Y^1$  and  $Y^2$

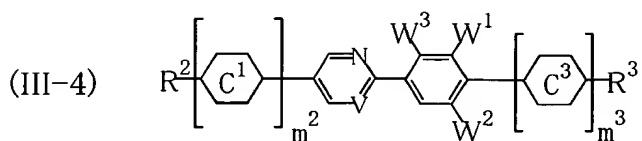
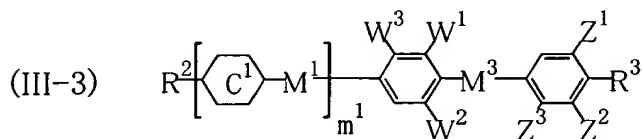
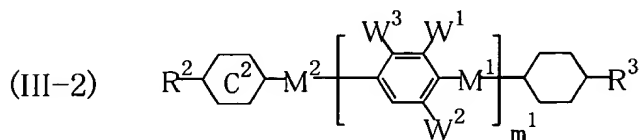
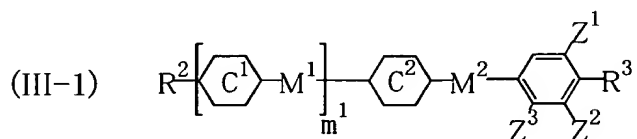
5 represent F, and  $W^1$  to  $W^4$  represent H or at least one of them is F, in the general formula (II-3); and

(II-civ) compound of the general formulas (II-1) and (II-2) in which at least three hydrogen atoms of rings  $B^1$  and  $B^2$  are substituted with a deuterium atom if rings  $B^1$  and  $B^2$  represent

10 trans-1,4-cyclohexylene.

9. A nematic liquid crystal composition according to any one of claims 1 to 8, wherein said liquid crystal component C contains compounds selected from the group of compounds

15 represented by the general formulas (III-1) to (III-4):



(wherein  $W^1$  to  $W^3$  each independently represents H, F, Cl,  $CF_3$ ,

OCF<sub>3</sub>, or CN;

V represents CH or N;

R<sup>2</sup> and R<sup>3</sup> each independently represents an alkyl or alkoxy group having 1 to 10 carbon atoms or an alkenyl or alkenyloxy group having 2 to 10 carbon atoms, said alkyl, alkoxy, alkenyl or alkenyloxy group can have one, or two or more F, Cl, CN, CH<sub>3</sub> or CF<sub>3</sub> as a non-substituent or substituent group, and one, or two or more CH<sub>2</sub> group, which are present in said alkyl, alkoxy, alkenyl or alkenyloxy group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

Z<sup>1</sup> to Z<sup>3</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, and Z<sup>3</sup> each independently represents -CH<sub>3</sub>;

M<sup>1</sup> to M<sup>3</sup> each independently represents, a single bond, -COO-, -OCO-, -CH<sub>2</sub>O-, -OCH<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH=CH-(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-CH=CH-, -CH=N-, =CH=N-N=CH-, or -N(O)=N-, and M<sup>1</sup> and M<sup>3</sup> each independently represents -CH=CH-, -CF=CF-, or C≡C-;

rings C<sup>1</sup> to C<sup>3</sup> each independently represents trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, naphthalene-2,6-diyl and 1,2,3,4-tetrahydronaphthalene-2,6-diyl can have one, or two or more F, Cl, CF<sub>3</sub>, OCF<sub>3</sub> or CH<sub>3</sub> as a non-substituent or substituent group, and rings C<sup>1</sup> and C<sup>3</sup> may also be 1,4-phenylene, 2- or 3-fluoro-1,4-phenylene, 2,3-

difluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-phenylene, 2,3-dichloro-1,4-phenylene, or 3,5-dichloro-1,4-phenylene;

one, or two or more hydrogen atoms, which are present in side chain groups  $R^2$  and  $R^3$ , linking groups  $M^1$  to  $M^3$  and rings  $C^1$  to  $C^3$ , may be substituted with a deuterium atom;

$m^1$  to  $m^3$  each independently represents 0 or 1, and  $m^2 + m^3$  is 0 or 1; and

atoms, which constitute the compounds of the general formulas (III-1) to (III-4), may be substituted with isotope atoms thereof).

10. A nematic liquid crystal composition according to claim 9, wherein said liquid crystal component C satisfies at least one of the following conditions:

(i) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(ii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(iii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds



represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(iv) said liquid crystal component C contains one, or two  
5 or more kinds of compounds selected from the compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(v) said liquid crystal component C contains one, or two  
10 or more kinds of compounds selected from compounds represented by the general formula (III-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), the content of said selected compounds in said liquid crystal component C being within a  
15 range from 5 to 100% by weight;

(vi) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1) and one, or two or more kinds of compounds selected from compounds represented by the  
20 general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(vii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds  
25 represented by the general formula (III-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected

compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(viii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds

5 represented by the general formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

10 (ix) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected  
15 compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(x) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds  
20 of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xi) said liquid crystal component C contains one, or two  
25 or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general

formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xiii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xiv) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), one, or two or more kinds of compounds selected from compounds represented by

the general formula (III-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xv) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight.

11. A nematic liquid crystal composition according to claim 9, wherein said liquid crystal component C contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (III-ai) to (III-axii), the content of said compounds being within a range from 10 to 100% by weight:

(III-ai) compounds in which  $R^2$  is an alkenyl group having 2 to 5 carbon atoms, in the general formulas (III-1) to (III-4);

(III-aii) compounds in which  $R^3$  is a straight-chain alkenyl or alkenyloxy group having 2 to 7 carbon atoms, in the general formula (III-1) to (III-4);

(III-aiii) compounds in which  $m^1$  is 0 and  $M^2$  is a single bond or  $-(CH_2)_2-$ , in the general formula (III-1);

(III-aiv) compound in which  $m^1$  is 1, in the general formula (III-1);

5 (III-av) compound represented by the general formula (III-2);

(III-avi) compound in which at least one of  $Z^1$ ,  $Z^2$  and  $W^1$  to  $W^3$  is F, in the general formula (III-3);

(III-avii) compound in which  $Z^3$  is F or  $-CH_3$ , in the general formula (III-3);

10 (III-aviii) compound in which  $m^1$  is 0 and  $M^3$  is a single bond, in the general formula (III-3);

(III-aix) compound in which  $m^1$  is 1,  $M^1$  is a single bond,  $-OCO-$ ,  $-CH_2O-$ ,  $-OCH_2-$ ,  $-(CH_2)_2-$ ,  $-(CH_2)_4-$ ,  $-CH=CH-$   
 $(CH_2)_2-$ ,  $-(CH_2)_2-CH=CH-$ ,  $-CH=N-$ ,  $-CH=N-$

15  $N=CH-$ ,  $-N(O)=N-$ ,  $-CH=CH-$ , or  $-CF=CF-$ , in the general formula (III-3);

(III-ax) compound in which  $M^1$  is  $COO-$  or  $-C\equiv C-$  and  $M^3$  is  $-OCO-$ ,  $-CH_2O-$ ,  $-OCH_2-$ ,  $-(CH_2)_2-$ ,  $-(CH_2)_4-$ ,  $-CH=CH-$   
 $(CH_2)_2-$ ,  $-(CH_2)_2-CH=CH-$ ,  $-CH=N-$ ,  $-CH=N-$

20  $N=CH-$ ,  $-N(O)=N-$ ,  $-CH=CH-$ ,  $-CF=CF-$ , or  $-C\equiv C-$ , in the general formula (III-3);

(III-axi) compound represented by the general formula (III-4);  
 and

(III-axii) compounds in which at least one hydrogen atom of  
 25 rings  $C^1$  to  $C^3$  is substituted with a deuterium atom if rings  $C^1$  to  $C^3$  represent trans-1,4-cyclohexylene, in the general formulas (III-1) to (III-4).

12. A nematic liquid crystal composition according to claim 9, wherein said liquid crystal component C contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (III-bi) to (III-bix), the content of said compounds being within a range from 10 to 100% by weight:

(III-bi) compound in which  $R^2$  is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,  $R^3$  is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms,  $m^1$  is 0, and  $M^2$  is a single bond,  $-COO-$ , or  $-(CH_2)_2$ , in the general formula (III-1);

(III-bii) compound in which  $R^2$  is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,  $R^3$  is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms,  $m^1$  is 1, the ring  $C^1$  is trans-1,4-cyclohexylene, and one of  $M^1$  and  $M^2$  is a single bond and other one is a single bond,  $-COO-$ , or  $-(CH_2)_2-$ , in the general formula (III-1);

(III-biii) compound in which  $R^2$  is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,  $R^3$  is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, the ring  $C^2$  is trans-1,4-cyclohexylene or trans-1,4-cyclohexenylene,  $m^1$  is 0, and  $M^2$  is a single bond,  $-COO-$ , or  $-(CH_2)_2-$ , in the general formula (III-2);

(III-biv) compound in which  $R^2$  is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,  $R^3$  is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, the ring  $C^2$  is trans-1,4-cyclohexylene or trans-1,4-cyclohexenylene,  $m^1$  is 1, and one of  $M^1$  and  $M^2$  is a single bond, in the general formula (III-2);

(III-bv) compound in which  $R^2$  is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,  $R^3$  is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms,  $m^1$  is 0, and  $M^3$  is a single bond,  $-C\equiv C-$ , or  $-CH=N-N=CH-$ , in the general formula (III-3);

(III-bvi) compound in which  $R^2$  is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,  $R^3$  is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms,  $m^1$  is 1,  $M^1$  is a single bond,  $-(CH_2)_2-$ ,  $-COO-$ , or  $-C\equiv C-$ , and  $M^2$  is a single bond,  $-COO-$ , or  $-C\equiv C-$ , in the general formula (III-3);

(III-bvii) compound in which  $R^2$  is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,  $R^3$  is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms,  $m^1$  is 1, one of  $M^1$  and  $M^3$  is a single bond and other one is a single bond or  $-C\equiv C-$ , and at least one of  $W^1$  and  $W^2$  is F, in the general formula (III-3);

(III-bviii) compound in which  $R^2$  is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,  $R^3$  is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, and any one of  $Z^2$  and  $Z^3$  is substituted with F or  $CH_3$ , in the general formula (III-3); and

(III-bix) compound in which  $R^2$  is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,  $R^3$  is an alkyl or alkyloxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, and  $m^2+m^3=0$ , in the general formula (III-4).

13. A nematic liquid crystal composition according to any one of claims 1 to 12, wherein said liquid crystal composition contains one, or two or more kinds of core-structure compounds which have four six-membered rings and a liquid crystal phase-isotropic liquid phase transition temperature of  $100^\circ\text{C}$  or higher.

14. A nematic liquid crystal composition according to any one of claims 1 to 13, wherein said liquid crystal composition has a dielectric constant anisotropy within a range from 2 to 40, a birefringent index within a range from 0.02 to 0.40, a nematic phase-isotropic liquid phase transfer temperature within a range from  $50$  to  $180^\circ\text{C}$  or higher, and a crystal phase-, smectic phase- or glass phase-nematic phase transfer temperature within a range from  $-200$  to  $0^\circ\text{C}$ .



15. A nematic liquid crystal composition according to any one of claims 1 to 14, wherein said liquid crystal composition contains a compound having an optically active group capable of securing an induced helical pitch within a range from 0.5 to 1000  $\mu\text{m}$ .

16. An active matrix, twisted nematic or super twisted nematic liquid display device using the nematic liquid crystal composition of any one of claims 1 to 15.

17. A light scattering type liquid display device comprising a light modulation layer which contains the liquid crystal composition of any one of claims 1 to 15 and a transparent solid substance.

18. A light scattering type liquid display device according to claim 17, wherein said liquid crystal composition formed a continuous layer in said light modulation layer and said transparent solid substance formed a uniform three-dimensional network in said continuous layer.